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China-Brazil Economic Cooperation

A New Era of Growth and Opportunity

Itaú – E Fund Joint Whitepaper

China-Brazil Economic Cooperation: A New Era of Growth and Opportunity

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1. Introduction

In the evolving global economic landscape, the comprehensive strategic partnership between China and Brazil lays the ground for both nations to leverage their strengths and foster economic and financial cooperation that set a new model for regional economic cooperation. This white paper explores the potential of this collaboration, highlighting how it can drive sustainable development and mutual prosperity.

Starting with economic cooperation, China's advancements in infrastructure, manufacturing and high-tech industries complement Brazil's abundant natural resources and agricultural prowess. Notably, Brazil has emerged as one of the most innovative countries in agriculture and mining, with its strength rooted not only in available resources but also in technological advancements in these sectors. As China continues to lead in high-tech industries and expand its global manufacturing capabilities, Brazil offers a wealth of raw materials and a growing market for renewable energy solutions. The synergy and mutual relationship create fertile ground for collaboration. On one hand, the distinct comparative advantages of the two countries offer substantial complementarities, particularly in sectors such as electric vehicles, agriculture, natural resources and infrastructure. On the other hand, collaborative efforts in frontier technologies—including clean energy, artificial intelligence, smart agriculture, and biotechnology—can expedite advancements and drive mutual growth.

Brazil's commitment to renewable energy, with its significant reliance on hydropower and biofuels, aligns seamlessly with China's expertise in photovoltaics and electric vehicles. The integration of China and Brazil's renewable energy technology as well as energy matrix, not only enhances their green development but also opens new avenues for trade and investment between the two economies.

Furthermore, Brazil's role as a major supplier of essential minerals for clean energy technologies positions it as a strategic partner in China's industrial expansion.

Moving on to financial integration, the complementarity between the stock markets of China and Brazil further enhances financial integration. China's tech-driven market, dominated by technology innovation and growth companies, contrasts with Brazil's commodity-based market, featuring major players in mining and agriculture. This significant divergence allows for broader portfolio diversification, balancing high-growth, and high volatility tech sectors with the stability of natural resource investments.

Financial integration also opens new avenues for individual investors in both countries. By facilitating easier access to each other's financial assets, Brazil and China can foster greater household participation in global markets, enhancing wealth creation and financial literacy at the grassroots level.

Furthermore, increased Brazilian investment in the Chinese stock market could contribute to the high-quality development of Chinese financial market. By introducing varied risk tolerance and investment strategies, this integration can help further enhance the efficiency and diversity of Chinese financial market, as well as contributing to its intrinsic stability.

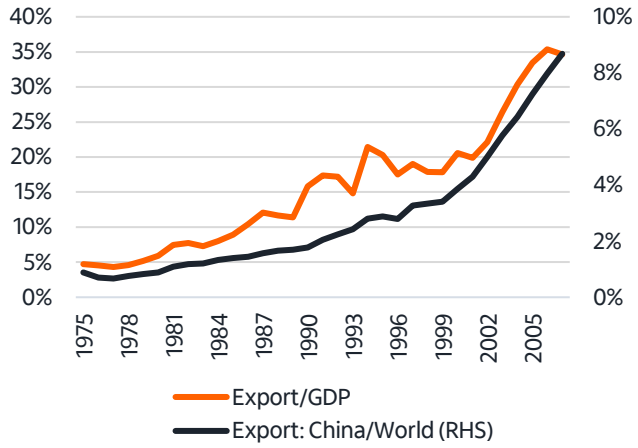
This paper will delve into the economic dynamics and strategic initiatives underpinning the China-Brazil partnership, emphasizing the potential for these two nations to lead in sustainable development and economic resilience. By focusing on the positive aspects of this collaboration, we aim to underscore the transformative impact of China-Brazil cooperation on the broader Latin American region and the global economy.

2. Economic Overview

2.1 China's Economic Transformation: Advancing High-Tech Manufacturing and Innovation

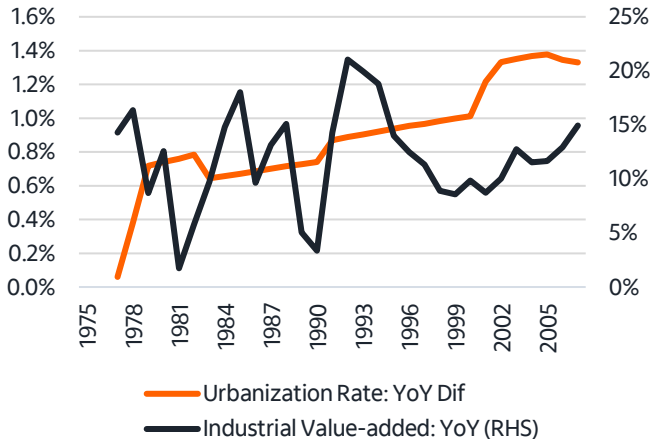
Since its accession to the World Trade Organization (WTO) at the turn of the century, China's pace of economic globalization has accelerated significantly. The integration into the global economy has driven a profound transformation in China's economy, propelling China's industrialization and urbanization, and swiftly elevating the nation to the position of a global manufacturing hub. From textiles and electronics to high-tech equipment and automobiles, Chinese manufacturing has captured a significant share of the global market. Export-driven industrialization has led to a concentration of population in coastal and inland cities, speeding up urbanization. This urban growth, in turn, benefits industrialization by providing a larger workforce and better infrastructure, which further attracts businesses. As a result, industrialization and urbanization reinforce each other, creating a positive feedback loop.

Figure 1 - China's Accelerated Integration into Globalization



Source: National Bureau of Statistics, WTO, 1975-2007

Figure 2 - Globalization Drives Industrialization and Urbanization

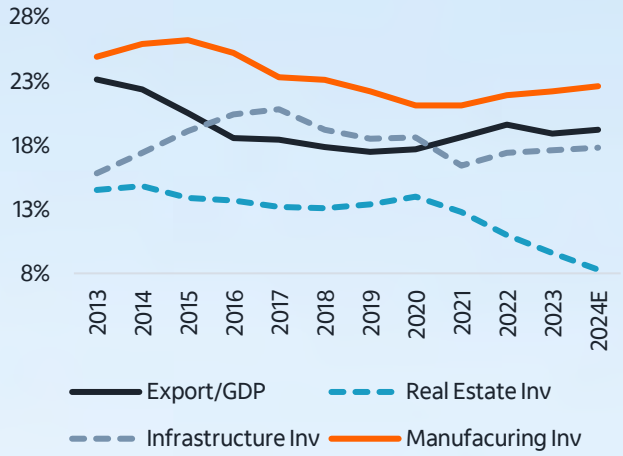


Source: National Bureau of Statistics, World Bank, 1975-2007

After the Global Financial Crisis, China leaned more on investment-driven economic growth. The Chinese government implemented several measures to stimulate economic growth, including large-scale infrastructure projects and real estate investments. Rapid development in infrastructure, such as high-speed railways, bridges, and airports, narrowed the urban-rural gap and laid the foundation for long-term economic growth. However, with urbanization reaching a certain level, its pace naturally decelerates, the conventional growth model that relies on real estate investment and land finance faced challenges.

China is undergoing a profound transformation of the economic structure, switching the gears to new quality productive forces and mitigating financial risks in real estate and government debts, to realize a sustainable, comprehensive economic growth. Leveraging on its large pool of skilled engineers, China boosts R&D investment, and directs financial capital into the industrial sector. This shift has led to a significant and continuous industrial upgrades, driving more investments and expanding exports.

Figure 3 - Export Expansion Drove Up Manufacture Investment, Filling the Real Estate Gap

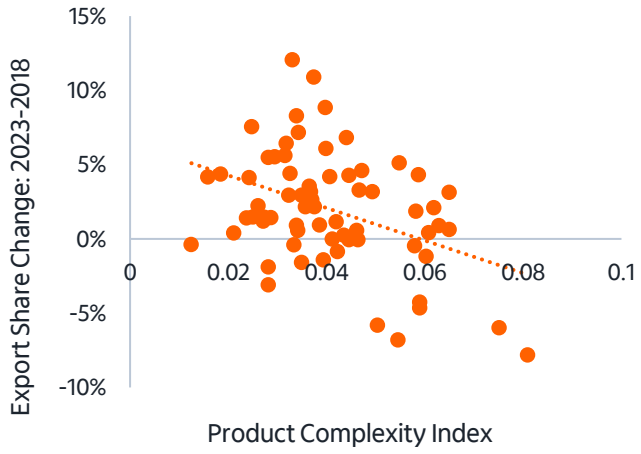


Source: National Bureau of Statistics, General Administration of Customs, 2013-2024

Figure 4 - China Still Maintains a Relatively High Growth

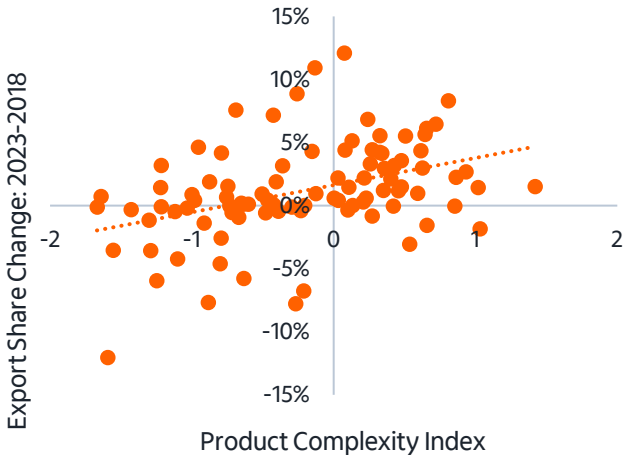
Source: National Bureau of Statistics, 2013-2024

Figure 5 - China's Exports Composites Less of Labor-Intensive Sectors



Source: Ministry of Commerce, 2018-2023

Figure 6 - High-Tech Products Are Seeing Growing Export Share



Source: UN COMTRADE, 2018-2023

In summary, over the past decade, following the global financial crisis, China has leveraged investment-driven strategies for rapid economic growth. With the slowdown in urbanization and rising real estate bubble risks, the Chinese government has timely adjusted policies, implementing deleveraging and structural transformation strategies to mitigate systemic economic risks. These efforts contributed to industrial upgrading and export expansion, which in turn have stabilized the economy. Notably, breakthroughs in new energy and AI sectors have injected new vigor into China's economy.

Looking forward, China will continue to prioritize technological innovation to build a stronger development foundation, driving further progress and upgrades in various fields. Through ongoing reforms and policy modifications, China aims to navigate new opportunities amid challenges, aiming for long-term, sustainable, and high-quality economic growth.

2.2 Three Decades After Ending Hyperinflation, Brazil's Strides Toward Higher GDP Growth Amid Fiscal Challenges

Over the past decade, Brazil has undergone a significant transformation, particularly as it celebrates 30 years since the Real Plan, which effectively ended hyperinflation and stabilized the economy in 1994. Since then, the country has focused on increasing its potential GDP, a crucial step towards sustained economic growth and development. However, the path has not been without challenges, particularly concerning Brazil's fiscal stance. Mandatory spending growth has limited the space for public investment, and the fiscal environment has often led to elevated interest rates, which, in turn, crowd out private investment.

Despite these fiscal constraints, Brazil's society has made noteworthy strides towards achieving a higher potential GDP growth rate. Congress has implemented a series of important structural reforms, such as changes to labor laws, a new fiscal framework, and a reform of the social security system. These reforms are aimed at enhancing fiscal sustainability, improving the business environment, and creating conditions that could lower the cost of private investment. Moreover, ongoing discussions on tax reform signal a commitment to further optimizing the country's economic structure.

Beyond governmental efforts, Brazil's private sector has played a vital role in driving innovation, particularly in key industries like agriculture and mining. These sectors have leveraged advancements in technology and practices, positioning Brazil as a global leader in agribusiness and natural resource extraction. As a result, Brazil has made significant progress in increasing productivity and competitiveness, contributing to the broader goal of boosting the country's economic potential.

While challenges remain, including the need for a more robust fiscal framework and increased investment, Brazil's progress over the past decade highlights a collective effort—by both the public and private sectors—towards building a more sustainable and prosperous economic future.

There are some potential signs that such efforts could be starting to bear fruits. Brazil's GDP is expected to grow by 3% this year, marking the fourth consecutive year of strong economic growth after a prolonged period of anemic performance.

For seven years, the country struggled with growth rates below 2% or even negative prints (Figure 7). Behind this strong growth is a very robust labor market, with the unemployment rate now at the same level as the lowest recorded in the last two decades (Figure 8).

Figure 7 - GDP Growth in Brazil

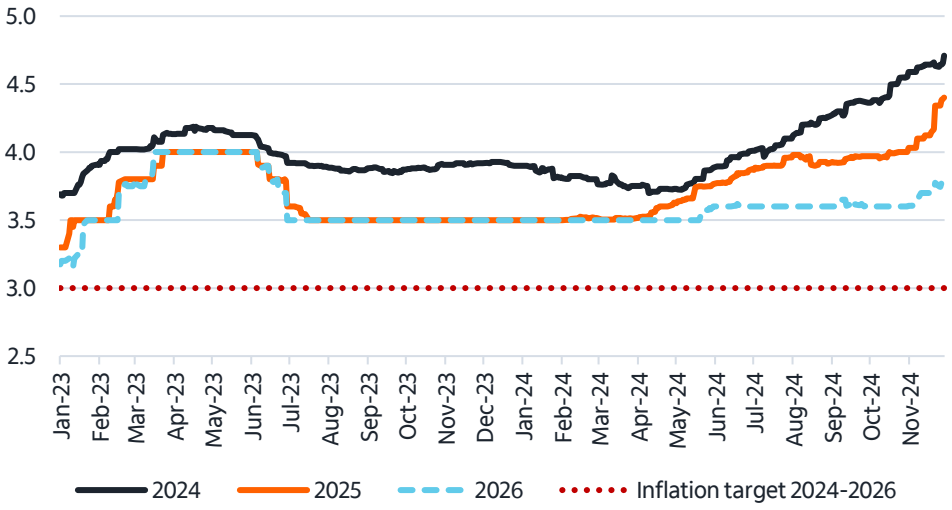
Source: Brazilian Institute of Geography and Statistics (IBGE)

Figure 8 - Unemployment Rate in Brazil

Source: Brazilian Institute of Geography and Statistics (IBGE)

This sequence of robust growth is generating optimism about the possibility that Brazil's potential growth rate, traditionally seen as low and estimated at just below 2%, may have increased. However, this optimism is tempered by concerns over inflation. Inflation expectations for this year and the next two years are not only above the Central Bank of Brazil's target of 3%, but they have also been moving further away from this target recently (Figure 9). This divergence raises doubts about whether the Brazil economy is truly operating at a growth rate compatible with its potential and casts uncertainty on the sustainability of the current strong growth trajectory.

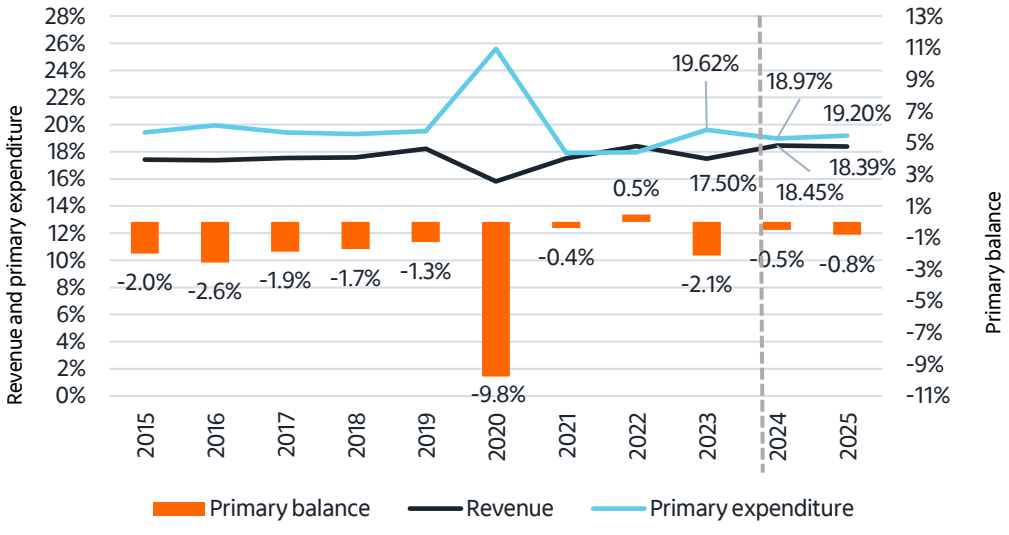
Figure 9 - Survey Based Inflation Expectations And the Inflation Target in Brazil



Source: Focus Report, Central Bank of Brazil (BCB)

Another factor contributing to the uncertainty about whether Brazil's growth is sustainable, or aligned with its potential pace, is the concern with public finances. Over the past 10 years, Brazil has achieved only one primary surplus, underscoring the immense challenge the country faces in balancing its population's social needs with fiscal responsibility (Figure 10).

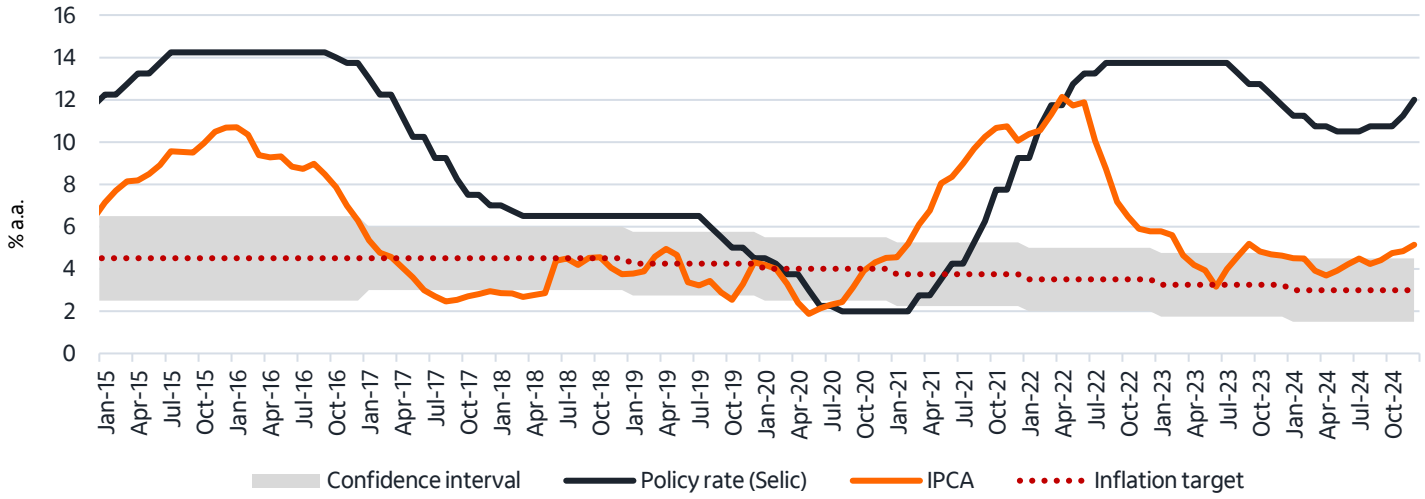
Figure 10 - Fiscal Revenues, Primary Spending and Primary Surplus (as % of GDP)



Source: Brazilian National Treasury; Focus Report, Brazilian Central Bank (BCB)

Faced with inflation expectations rising above target, strong economic growth, a historically low unemployment rate, and a current fiscal policy that could be perceived as expansionary, the Central Bank of Brazil has initiated a new interest rate hiking cycle (Figure 11).

Figure 11 - Brazil's Policy Rate (Selic)



Source: Brazilian Institute of Geography and Statistics (IBGE); Central Bank of Brazil (BCB)

3. China's Technological and Industrial Leadership in Clean Energy and AI

3.1 Dominance in Clean Energy: The New Trio

Notably, advancements in the fields of clean energy and artificial intelligence have positioned China at the global forefront, demonstrating strong capabilities in technological innovation, industrial layout, and policy support, deeply influencing global industries.

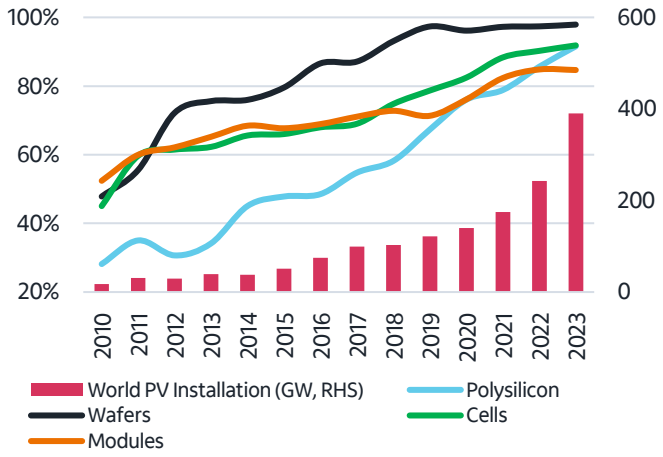
In the clean energy sector, China claims top global market shares in what's known as the "New Trio": photovoltaics, lithium batteries, and electric vehicles. The global competency is driven by China's comprehensive supply chains, advanced technology, and economies of scale that confer cost advantages. The country's diverse industrial sector, low infrastructure costs, and rapid supply chain integration allow for substantial scale production which dilutes fixed costs. Leading market positions enable companies to consolidate their technological advantages through continuous R&D investment.

In the photovoltaic industry, Chinese companies are globally leading in both production and installation of solar cell modules (Figure 12). According to the International Energy Agency, in 2023, China's newly installed renewable energy capacity exceeded the combined total of all other regions, equating to Europe's cumulative PV capacity. By the end of 2023, China's PV installed capacity surpassed 600 GW, accounting for one-third[1] of the global total, underscoring China as the largest contributor to the global renewable energy industry. This success is underpinned by China's holistic supply chain, cost advantages through large-scale production, and continuous technological innovation. From polysilicon production to wafers, cells, modules, and system integration, China's PV industry chain is integrated, resilient and efficient. Economies of scale have significantly reduced costs, making Chinese PV products highly competitive globally (Figure 13).

Continuous technological improvements have enhanced the efficiency and durability of PV modules, propelling ongoing industry upgrades.

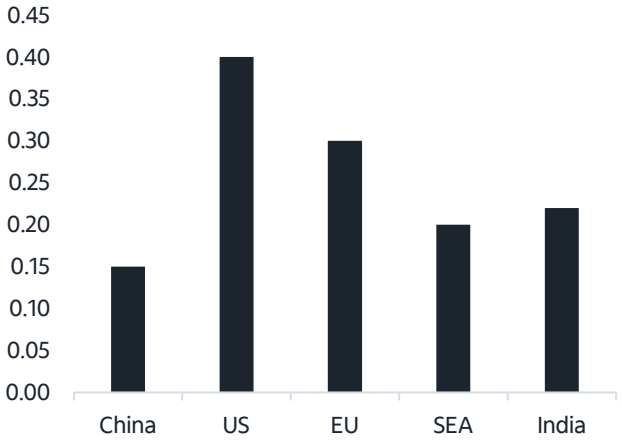
[1]https://iea-pvps.org/snapshot-reports/snapshot-2024/

Figure 12 - Photovoltaic Production in China and Worldwide



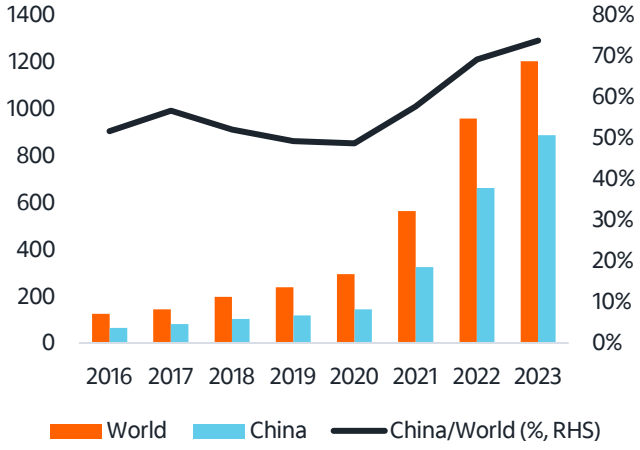
Source: Solarzoom, EIA, 2010-2023

Figure 13 - Cost per Watt of Photovoltaic Modules in US Dollars



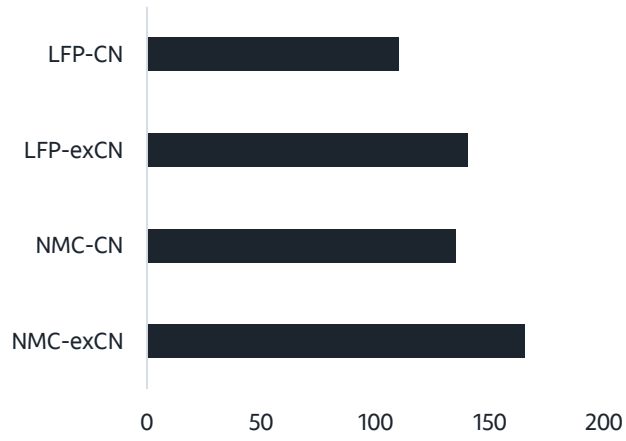
Source: Woodmac 2023

Figure 14 - Lithium Battery Production in China and Worldwide



Source: EVTank, 2016-2023

Figure 15 - Chinese Companies' Battery Costs Significantly Lower than Peers Overseas



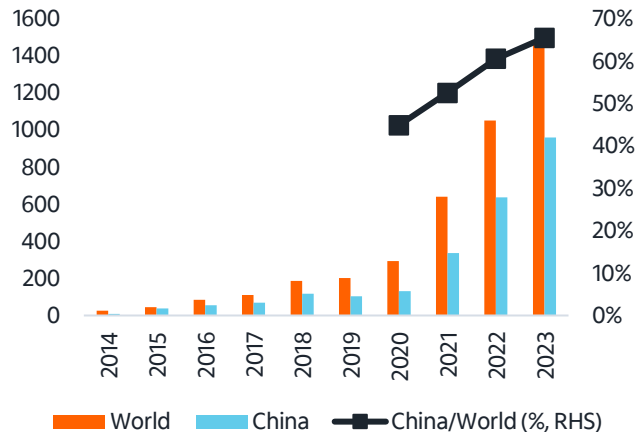
Source: Bernstein, GS, 2023

In the lithium battery sector, China holds over 70% of global manufacturing capacity[2] (Figure 14). Leading Chinese companies dominate the global market. Similarly, large-scale production capacity allows Chinese lithium battery manufacturers to reduce unit costs effectively. Coupled with rich lithium resources and a well-developed supply chain, China excels in raw material supply and cost control. Continuous innovation by enterprises and research institutions, driven by comprehensive production practices and large-scale manufacturing, rapidly advances technology, increasing battery energy density, charge-discharge efficiency, and safety performance.

[2]IEA Global EV Outlook 2024: Regional EV Lithium-ion battery manufacturing capacity, 2023 https://prod.iea.org/data-and-statistics/charts/regional-ev-lithium-ion-battery-manufacturing-capacity-by-manufacturer-headquarters-2023

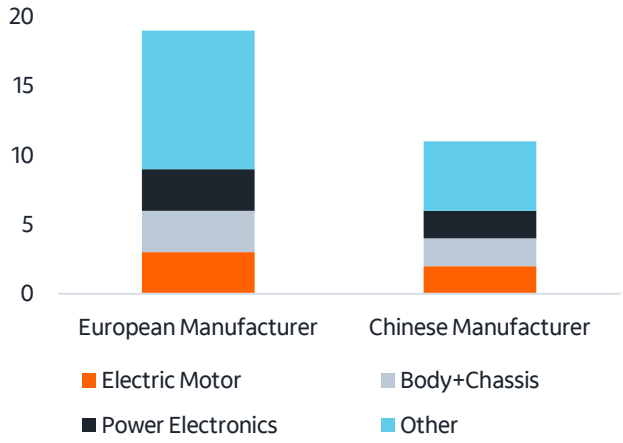
The NEV sector, a key focus of China in recent years, also leads globally. In 2023, China's NEV sales reached approximately 9.5 million units. According to the International Energy Agency, sales of battery electric vehicles (BEVs) and plug-in hybrid electric vehicles (PHEVs) in China exceeded 8 million units in 2023, accounting for over 50% of the global market share[3]. China became the world's largest automobile exporter in 2023, with NEV exports (BEVs and PHEVs) reaching 1.2 million units. Chinese companies have achieved significant breakthroughs in technological innovation and market penetration, taking seats of the top-selling NEV companies globally. Government support through policy subsidies and infrastructure development, along with a vast domestic consumer market, has laid a strong foundation for large-scale NEV production. Advanced battery management systems and continuous innovations in powertrain technology significantly enhance the competitiveness of Chinese NEVs globally.

Figure 16 - EV Production in China and Worldwide



Source: Changjiang Securities, 2014-2023

Figure 17 - Cost Comparison for the Same SUV Model, Excluding Battery Cost



SourceBernstein, GS, 2023

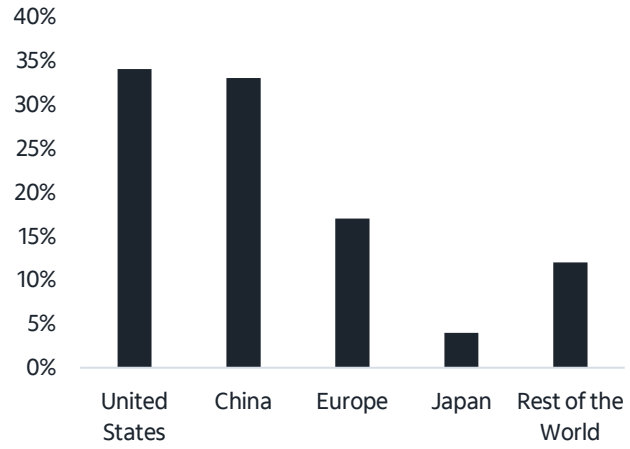
3.2 Advancements in Artificial Intelligence

In the artificial intelligence (AI) sector, China has emerged rapidly, becoming a crucial global player. While the United States remains a leader in many AI technologies, China ranks second in terms of computing power reserves and capital investment, significantly ahead of other economies. The rapid growth of China's AI industry is mainly driven by its strengths in computing power, data, and application scenarios. According to iResearch, the Chinese AI industry was valued at approximately USD 30 billion in 2023, and projections suggest it will soar to USD 110 billion by 2028, indicating vast growth potential. As of April 2024, there were over 4,500 AI firms in China, applying AI technologies extensively across healthcare, education, finance, and manufacturing, thereby driving a new wave of technological and industrial revolution.

Ample computing power, rich data resources, strong policy support, and a complete industrial ecosystem collectively drive China's AI industry momentum. China has invested heavily in high-performance computing and data center construction, amassing substantial computing resources. Moreover, the vast internet user base and diverse application scenarios provide abundant data to train and optimize AI algorithms. Government strategic planning and funding have further bolstered AI development, creating an ecosystem that spans from fundamental research to commercial application. China's AI industrial ecosystem is increasingly complete, with internet giants investing heavily, and numerous emerging startups rapidly advancing technological infrastructure and application.

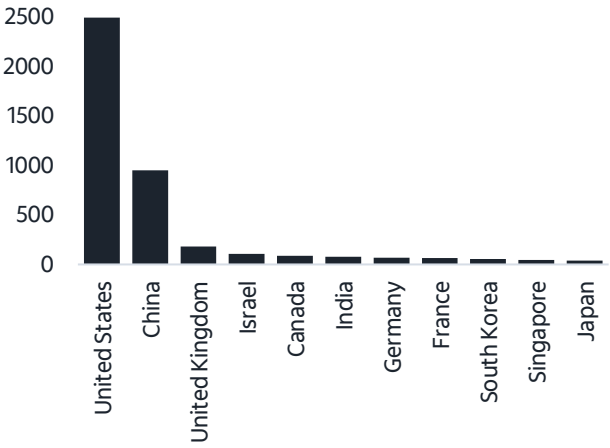
[3]IEA Global EV Outlook 2024 https://www.iea.org/reports/global-ev-outlook-2024/trends-in-electric-cars

Figure 18 - Global Computing Power Mainly Located in China and the US



Source: China Academy of Information and Communications Technology (CAICT), 2023

Figure 19 - Over the Last Decade, Most of Investment in AI were in China and the US



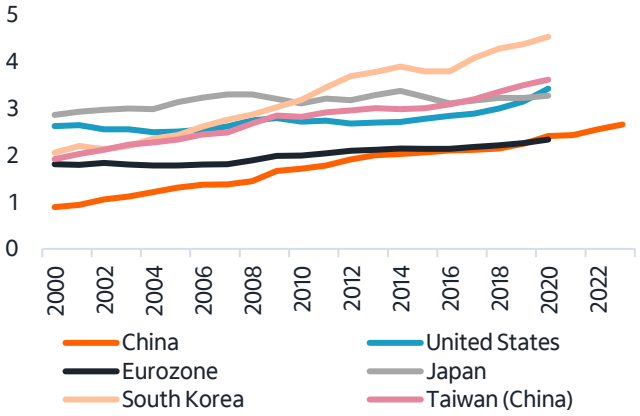
Source: Crunchbase, 2014-2023

China's competitive advantages in the new energy and AI fields stems from its robust industrial chain integration, large-scale production and application markets, continuous technological innovation, and supportive policies. With future technological advancements and deepening international cooperation, China is poised to continue playing a crucial role in the global new energy and AI industries.

3.3 Foundations for Sustained Economic Transformation

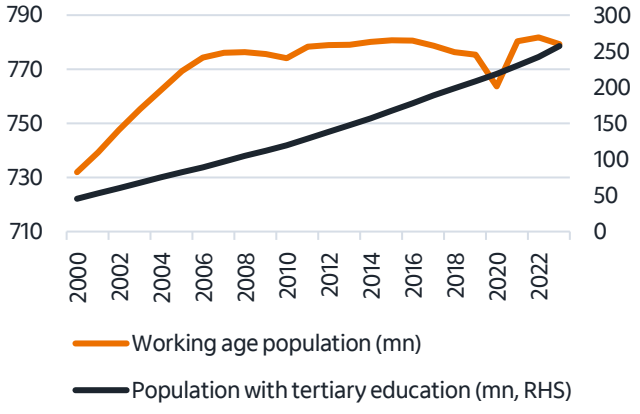
Sustained economic transformation is not only limited breakthroughs across specific industries. Looking at a bigger picture, China's is ramping up its research and development efforts and growing its pool of talents in various fields, setting the foundation of industrial upgrades. The country's R&D investment, measured as the percentage of GDP, has been rising annually, making China one of the world's largest R&D investors. Concurrently, the growing number of highly educated talents provides robust human resources to drive high-tech sector growth. Universities and research institutions continually yield innovative results, and the collaboration between the government and enterprises in integrating academic research and industrial application further propels advancements across frontier technological fields. As education and R&D investments continue, China is poised to steadily close the gap with developed countries in various advanced manufacturing sectors.

Figure 20 - China's R&D Investment Is Catching Up



Source: OECD, 2000-2023

Figure 21 - China's Human Capital Continues to Grow



Source: National Bureau of Statistics, World Bank, 2000-2023

4. Brazil's Strategic Resources: Energy, Agriculture, and Minerals

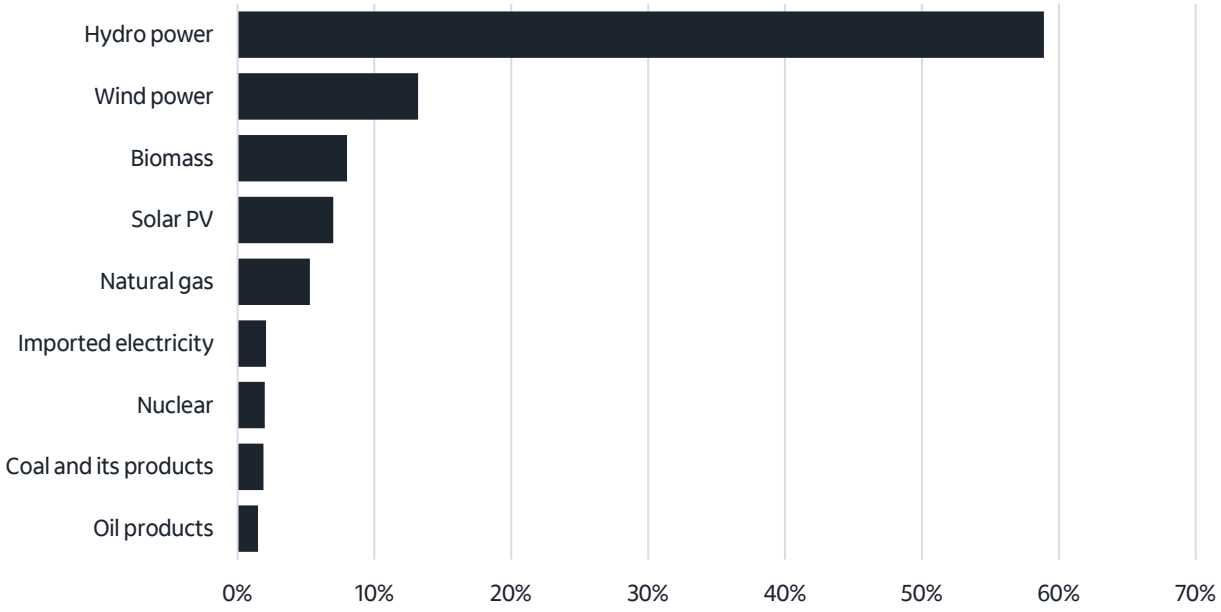
4.1 Brazil's Clean, Renewable Energy Matrix: Hydropower and Ethanol at the Forefront

Brazil's energy sector is notably distinctive in several ways, primarily due to its highly renewable energy matrix. What stands out is that a significant portion of Brazil's energy, particularly its electricity, comes from renewable sources, with hydropower being the dominant contributor. Around 60-65% of the country's electricity is generated from hydroelectric plants, a much higher percentage than most other countries (Figure 22).

The widespread use of ethanol-blended fuels and flex-fuel vehicles is a unique feature of Brazil's energy consumption landscape. Brazil is a global leader in biofuels, particularly ethanol. The country has developed a robust ethanol industry, primarily using sugarcane as a feedstock, which is more efficient and environmentally friendly compared to corn-based ethanol used in other countries like the United States.

Another notable aspect is Brazil's emerging role in offshore oil production, particularly in the pre-salt oil fields. These fields, discovered in the early 2000s, have significantly boosted Brazil's oil output and positioned it as a major oil exporter, despite the country's renewable energy dominance.

Figure 22 -The Brazilian Electrical Mix in 2023



Source: Energy Research Office (EPE)

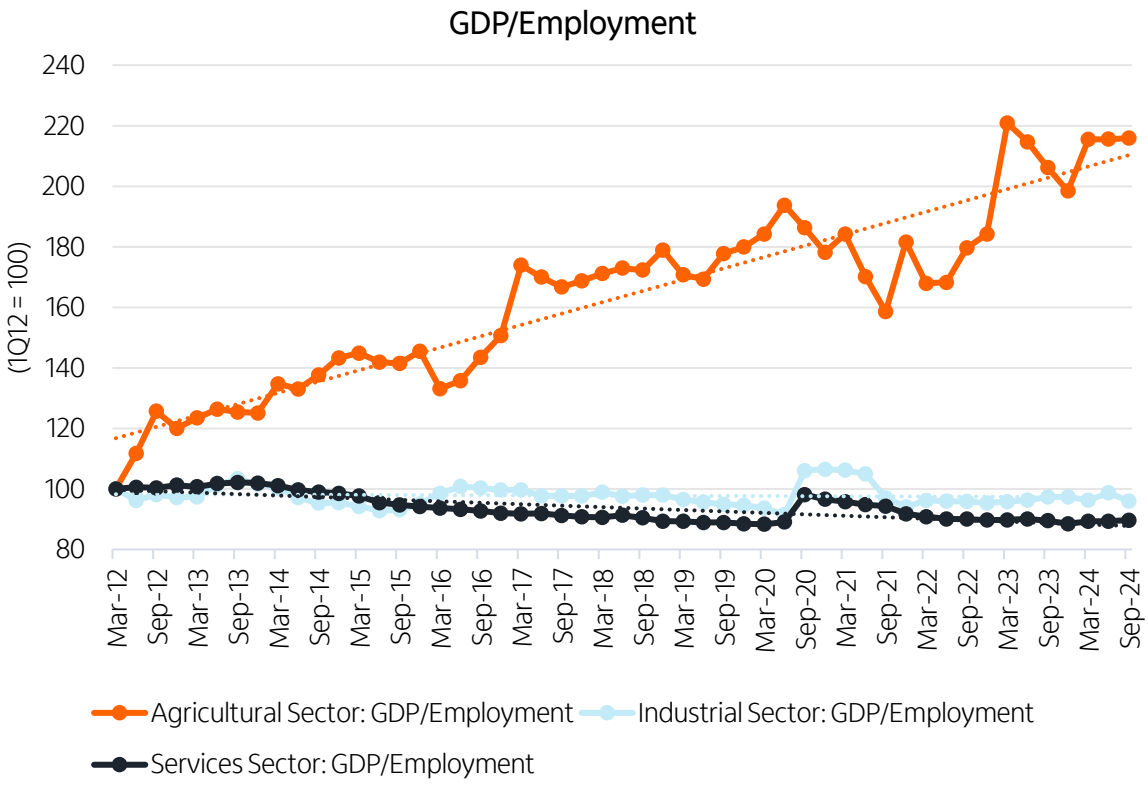
4.2 Brazil's Agricultural Dominance: Innovation and Global Market Leadership

Brazil has cemented its position as a global agricultural powerhouse, leading the world in the production and export of key commodities such as soybeans, corn, and, more recently, cotton. In the 2023/2024 harvest season, Brazil surpassed the United States to become the largest exporter of cotton—a milestone that was expected only by 2030, demonstrating the country's rapid progress in the sector. As it continues to strengthen its foothold in global markets, Brazil is also on track to become the top exporter of coffee and various meats, further solidifying its critical role in global food production.

This remarkable growth can be attributed to several factors, including the country's favorable climate, advanced agricultural technology, and efficient use of land through techniques like multiple cropping seasons. These elements allow Brazil to maximize its productivity year-round, providing a competitive edge over countries in regions where winter disrupts the agricultural cycle.

One striking achievement of Brazil's agricultural sector happened in the Cerrado region. This region once was thought to be unproductive due to its poor soil, and after was transformed through soil treatment and the development of crops suited to the area, becoming a vital agricultural zone.

Figure 23 - Output per Worker in Agricultural, Industrial and Service Sectors



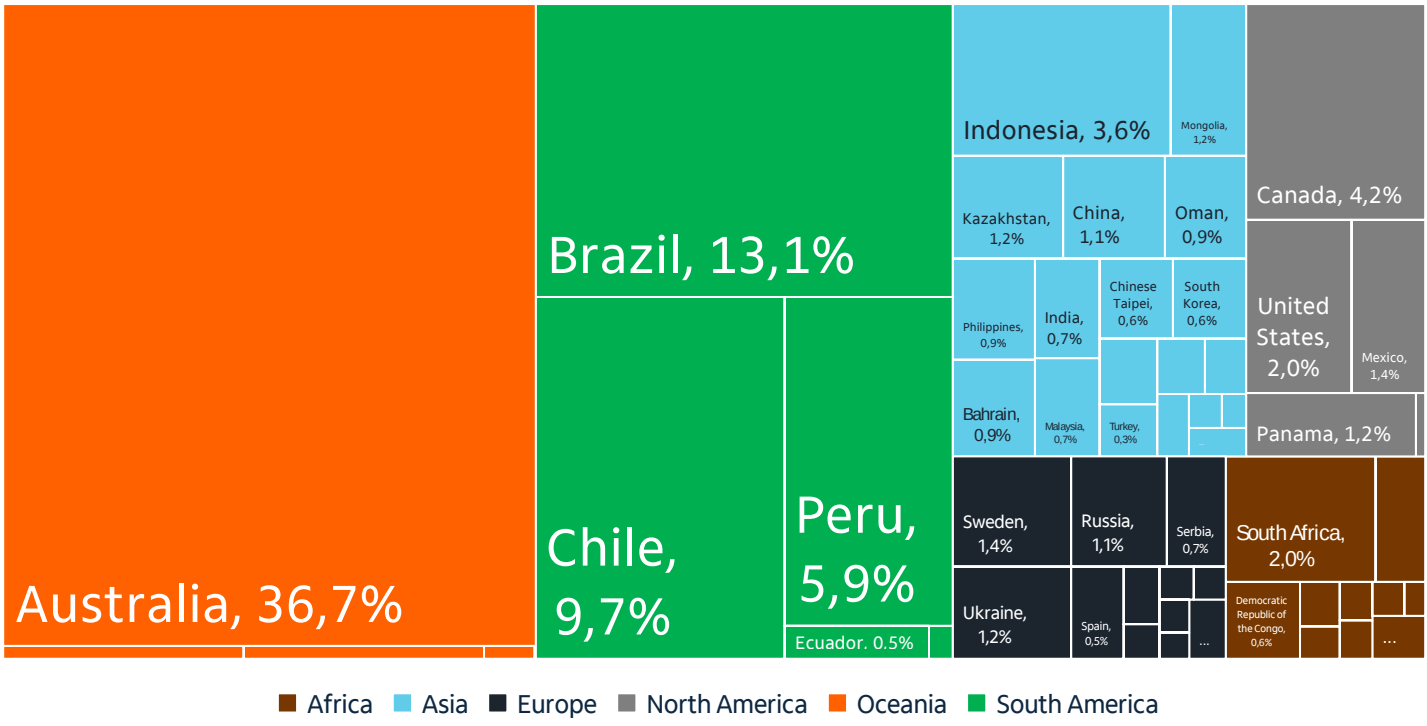
Source: Brazilian Institute of Geography and Statistics (IBGE)

4.3 Brazil's Mineral Wealth: Key to the Global Green Energy Transition

Brazil has a vast potential as a strategic supplier of minerals and metals, making it a key player in the global market, especially in the context of the growing demand for resources necessary for clean energy, electric vehicles (EVs), and advanced technologies. As the world shifts towards a green economy, the demand for minerals and metals such as iron ore, copper, nickel, and lithium is increasing, and Brazil is well-positioned to meet this demand.

Brazil's most relevant metal exports—iron ore, copper, and nickel—play a crucial role in global industries, particularly in the context of the green energy transition (Figure 24). Iron ore is essential for steel production, which is fundamental to building infrastructure for renewable energy projects like wind turbines and solar farms. Copper is critical for electrical wiring and components, making it indispensable for electric vehicles (EVs), power grids, and renewable energy systems. Nickel is increasingly important for producing batteries, especially for EVs, contributing to the global push for cleaner transportation. Brazil's rich reserves of these metals position it as a vital supplier for the world's move towards a more sustainable future.

Figure 24 - Which Countries Export Iron Ore, Copper Ore, and Nickel Ore (2022)



Source: Observatory of Economic Complexity

Brazil is a global leader in the mining sector, particularly renowned for its vast reserves of high-quality iron ore. In addition to its natural resource wealth, the country has become a pioneer in developing innovative, sustainable mining practices that set it apart from other major producers, like Australia. Two such groundbreaking innovations are low-carbon pelletization and solid waste technologies.

Low-carbon pelletization was developed by Vale, the country's leading mining company. This process involves converting iron ore into pellets that are used in steel production. What makes this innovation unique is its ability to utilize the ore's natural moisture, significantly reducing the need for fuel combustion, which is traditionally required for drying the pellets. This drastically reduces carbon emissions and energy consumption, offering a significant environmental advantage.

Low-carbon pelletization is particularly feasible in Brazil due to the exceptionally high-grade iron ore found in regions like Pará, where iron content can reach as high as 65%. This purity allows the process to be highly efficient, reducing the need for additional treatment or energy-intensive refinement. In contrast, other iron ore-producing nations, such as Australia, often deal with lower-grade ore that requires more processing, making low-carbon pelletization less practical.

Another innovative approach pioneered in Brazil is the development of solid waste management technologies aimed at reducing the environmental impact of mining operations. In recent years, Brazil has aggressively pursued safer alternatives for storing mining waste, or "tailings." Vale, once again at the forefront of innovation, has introduced technologies that transform these waste materials into more stable, solid forms. This significantly reduces the need for massive tailings dams, which pose serious environmental and social risks.

The solidification of mining residues helps minimize the liquid content of tailings, making it easier and safer to store or repurpose the material. This innovation not only improves safety but also contributes to the broader goal of making the mining industry more sustainable. By reducing reliance on dam structures, which are potentially hazardous, Brazil is leading the way in setting new global standards for environmental responsibility in mining.

5. China-Brazil Opportunities for Economic Cooperation and Financial Integration

5.1 Strategic Brazil-China Partnership in EVs and Renewable Energy Drives Global Sustainability

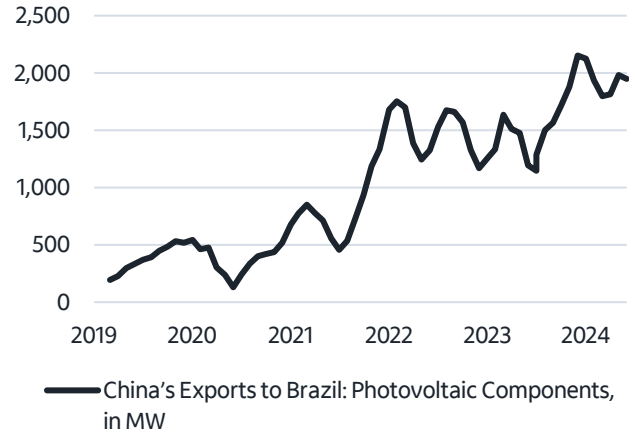
Brazil and China have significant potential for collaboration in the electric vehicle (EV) sector, fully leveraging their respective strengths in renewable energy and industrial production. Brazil, with over 80% of its energy generated from clean renewable sources, offers a truly green environment for the use of EVs, as the electricity required to charge the batteries does not rely on fossil fuels. This makes Brazil an ideal market for the expansion of EVs, aligning with global sustainability goals. At the same time, China is poised to become the world's leading producer of EVs and is already a major manufacturer of solar panels and wind turbines, underscoring its leadership in the clean energy transition. Additionally, China's need for new markets for its EVs aligns with Brazil's growing interest in electrification and sustainability.

The clean energy sector has witnessed profound cooperation between China and Brazil. Chinese photovoltaic (PV) products and electric vehicles (EVs), recognized for their high quality and affordability, have taken significant share of the Brazilian market. These products facilitate Brazil's energy structure sustainability and advance its green development.

As previously discussed, China, leading the global PV industry, has exported an extensive amount of PV modules and equipment to Brazil, aiding in the creation of a greener energy system. Brazil, with its vast land area and abundant sunlight, is well-suited for solar energy development. The collaboration has rapidly advanced Brazil's solar sector, significantly increasing the country's renewable energy share.

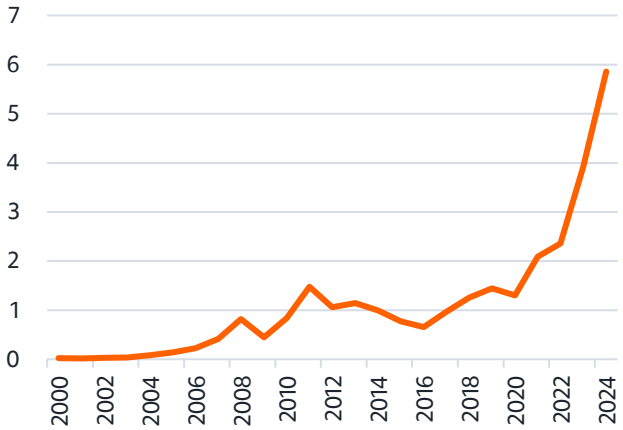
Chinese EV brands have been making considerable inroads into the Brazilian market, thanks to their advanced technology and excellent performance, offering Brazilian consumers more driving options. The promotion of EVs not only helps reduce urban air pollution but also drives the energy transition in the transportation sector in Brazil.

Figure 25 - MW China's Exports to Brazil: Photovoltaic Components, in MW



Source: General Administration of Customs, as of July 31, 2024

Figure 26 - China's Exports to Brazil: Auto Parts, in Billion USD



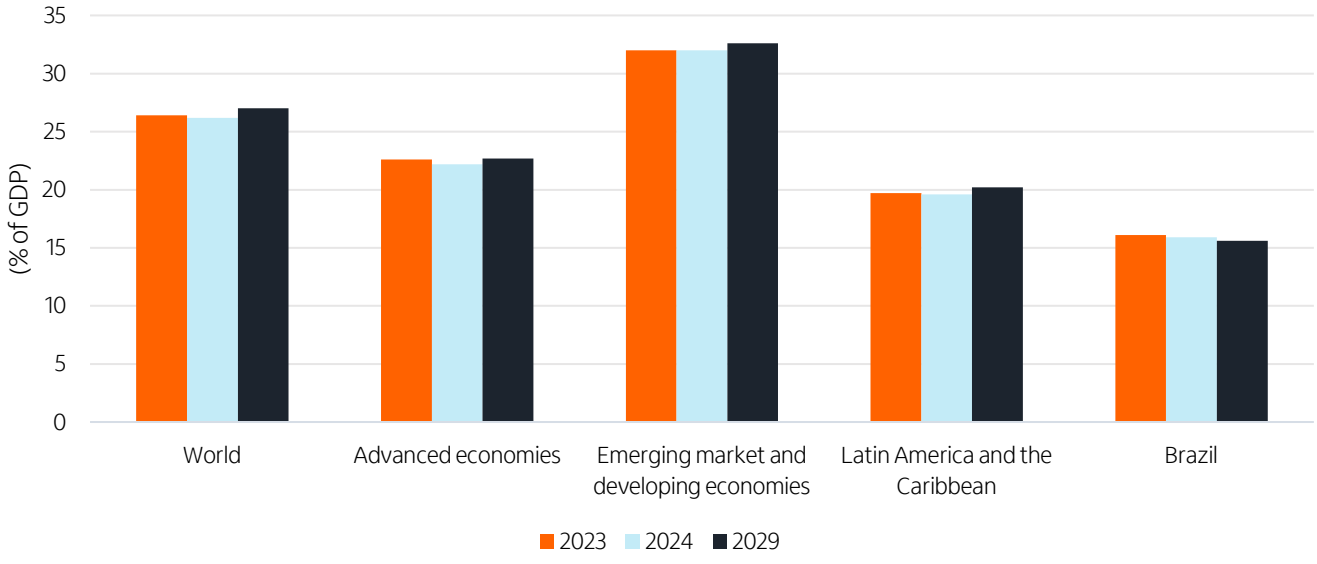
Source: General Administration of Customs, 2000-2024

Brazil is also a reliable supplier of critical minerals needed for EVs, wind turbines, and solar panels. It exports significant quantities of iron, copper, and nickel, which are essential for EV batteries, motors, and renewable energy infrastructure. Other relevant minerals that Brazil exports include bauxite (for aluminum) and manganese, which play important roles in both vehicle and battery production. This complementarity between Brazil's mineral resources and China's industrial capacity creates a unique opportunity for strategic partnerships in clean energy and EV development, positioning both nations at the forefront of the global energy transition.

5.2 Enhancing Brazil's Growth: Strategic Investments and China-Brazil Cooperation

Brazil stands at the threshold of a significant opportunity to enhance its potential growth through strategic investments across various sectors. By focusing on increasing our investment-to-GDP ratio (Figure 27) we can unlock substantial productivity gains, particularly in the industrial and service sectors, building on the notable successes already achieved in agriculture. Current projections suggest a potential GDP growth of Brazil below 2% per annum, a target we can exceed with the right initiatives.

Figure 27 - Investment-to-GDP Ratios



Source: World Economic Outlook, International Monetary Fund (IMF)

Over the past years, China's active participation in Brazil's infrastructure projects has spanned key areas such as ports and electricity systems (Figure 28). These investments have accelerated Brazil's economic development and strengthened the foundation for bilateral trade cooperation.

Figure 28 - China Investments in Brazilian Infrastructure Projects

Cases	Infrastructure Projects
Port A	Acquired stakes in a key port in Brazil. The company also cooperates with local companies in various fields such as logistics, highways, bonded port areas, and comprehensive urban community development.
Port B	Jointly invested with Brazilian company to build the port, which contributes to the employment and economic development in Brazil.
Grid	Established grid enterprise in Brazil, which has become a major electricity transmission company in Brazil.
Power Station	Took over a local energy company in Brazil, contributing to the hydropower business in the region.

Chinese manufacturing and automotive enterprises have set up production line and assembly plants in Brazil, leveraging the country's rich resources and labor to produce goods for Brazilian and global markets. These operations drive local industry chain development, impart advanced manufacturing technology and management experience, and elevate Brazil's manufacturing capabilities.

China's home appliance companies, that provides globally competitive products, also set up factories in Brazil. This move reduces production costs and better meets the demands of the Brazilian market. The result is high-quality household appliances for Brazilian consumers, which improves their quality of life and increases household purchasing power.

Figure 29 - China Set Up Factories in Brazil

Cases	Local Factories
Construction Machinery	Set up local manufacturing base in Brazil, to produce construction equipment, support local sales and exports.
Automobile	Having set up a factory in Brazil, the Chinese automobile company A is extensively renovating the Brazilian facility to gear up for electric vehicle production.
Automobile	Chinese company B acquired a European company's in Brazil for local production and distribution.
Automobile	Chinese company C announced in 2023 the construction of a large production complex consisting of multiple factories in Brazil, with plans to begin production in close time.
Home Appliance	Chinese company D finished construction of a new factory in Brazil, expected to start operation in the coming months.
Home Appliance	Chinese company E operates several manufacturing factories in Brazil, all with an annual production capacity over million units.

Nonetheless, abundant opportunities remain. While most of Brazil's energy production relies on renewables, there is still vast untapped potential for wind and solar energy. The northeast of Brazil, for example, is well known for its high wind speeds, making it an ideal location for expanding wind farms. The country also receives ample sunlight throughout the year, particularly in regions like the northeast and central areas, making solar power expansion a logical next step. Further investments in these areas could help Brazil diversify even more and increase energy security, while creating opportunities for local and international companies involved in renewable energy projects.

Investments in communication's infrastructure also presents a promising path forward for Brazil. There is considerable potential for adopting advanced technologies such as artificial intelligence, automation, robotics, electric vehicles, and big data. These innovations have the capacity to revolutionize our communication systems and logistics, leading to significant productivity improvements across all sectors.

Furthermore, this is an opportune moment for our local industry to embrace these emerging technologies. While many innovations are being developed globally, integrating them into our economy offers a chance to modernize and elevate our industrial capabilities. With a proactive and strategic approach, we can manage costs and mitigate inflationary pressures, positioning Brazil as a competitive player on the global stage. The future is bright, and with concerted effort, Brazil can achieve robust and sustainable growth.

5.3 Financial Market Integration: China-Brazil Investment Synergies

China and Brazil are also enhancing their financial connectivity to facilitate trade and investment activities. The bilateral currency swap agreement signed in 2013, covering 50% of the annual trade volume, ensured trade efficiency. The establishment of the Renminbi (RMB) Clearing Arrangement in 2023 further streamlined the financial dealings of businesses and financial institutions in both countries, preparing them for larger-scale economic interactions.

Jointly advocating and establishing the BRICS New Development Bank, China and Brazil are committed to addressing poverty and alleviating inequality and development issues. By 2023, the New Development Bank had invested over $6 billion in Brazilian infrastructure projects. Moreover, the China Development Bank, together with the Brazilian Development Bank, has facilitated the key development projects in local society. By mid-2024, the China Development Bank had issued loans exceeding $50 billion to support vital sectors in Brazil such as oil and gas, power, mining, manufacturing, and ports, driving inclusive and sustainable economic and social development in both countries.

Moreover, both nations benefit from increasingly open capital markets. China's opening-up measures, such as lifting quotas, qualification restrictions, and ownership limits, along with expanding connectivity mechanisms, have forged significant progress in linking domestic and global markets. Concurrently, Brazil maintains a pioneering stance in capital market openness, with overseas investors accounting for 40% of daily average trading volume and the availability of multiple global investment instruments through depositary receipts. This high-level openness and cooperation in capital markets yield profound benefits for investors, significantly enhancing global resource allocation capabilities of both nations.

One such avenue of benefit for investors arises through the cross-listing and greater accessibility of financial assets. A key driver of this opportunity lies in the complementarity between the compositions of their stock markets. China's stock market is dominated by technology companies, reflecting the country's status as a global leader in innovation and digital infrastructure. Brazil's market is largely composed of commodity-based companies, with major players in mining, oil, and agriculture. This divergence in market composition opens a pathway for investors in both countries to achieve broader portfolio diversification.

Integrating these two markets by offering Brazilian assets in China and vice versa could significantly enhance the risk-return profiles of investment portfolios. A combined allocation of Chinese tech-driven growth stocks and Brazilian commodity-based stability could improve the Sharpe ratio for investors, as it balances the volatility associated with high-growth sectors with the relative security offered by natural resource investments. In essence, by diversifying across these two distinct economies, investors could lower portfolio risk while benefiting from growth opportunities in both markets.

Moreover, increased financial integration would not only benefit institutional investors but could also provide new avenues for individual households in Brazil and China to expand their investment opportunities. By facilitating easier access to each other's financial assets, both nations could foster greater household participation in global markets, thereby enhancing wealth creation and financial literacy at the grassroots level.

A further consideration is the impact that increased Brazilian investment in the Chinese stock market could have on market stability. A more diversified investor base, particularly through increased foreign investment from Brazil, could help mitigate this volatility by introducing a broader spectrum of risk tolerance and investment strategies. This, in turn, could contribute to the maturation and stabilization of the Chinese financial market, making it more resilient to external shocks.

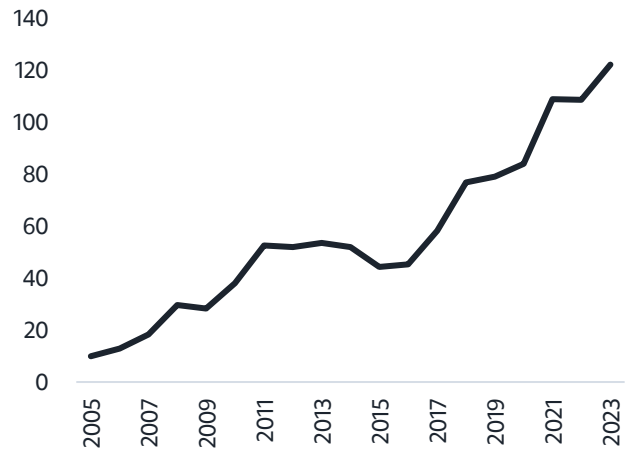
6. Conclusion

In recent years, China and Brazil have deepened their economic cooperation, achieving significant progress in bilateral trade and investment. As geopolitical landscape evolves, the two nations have engaged in close collaboration across various fields, particularly in new energy sector and infrastructure development, benefiting their respective economies and contributing to global economic stability and growth.

China and Brazil have a long history and bright future of their economic and trade relationship. Along the years, the bilateral trade between the two nations has expanded steadily, encompassing agricultural products, mineral resources, manufactured goods, and high-tech products. China stands as Brazil's largest trading partner, while Brazil is a key partner for China in Latin America. Notable trade volume and trade diversity underscore their deepening economic ties.

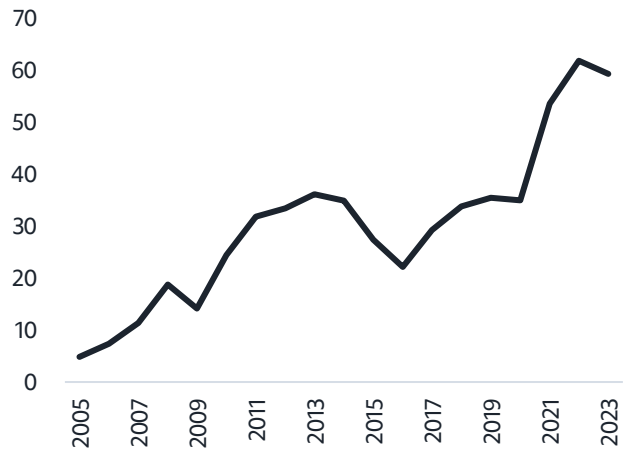
In the agricultural and mineral resources sectors, Brazil, as a global agricultural powerhouse, exports significant quantities of soybeans, corn, and beef to China, catering to the burgeoning demands of the Chinese market. Additionally, Brazil's rich iron ore and other mineral exports serve as crucial raw materials for China's industrial production. This bilateral trade bolsters Brazil's economic growth while ensuring China's resource supply stability.

Figure 30 - Brazil's Exports to China (in Billion USD)



Source: National Bureau of Statistics, General Administration of Customs, 2005-2023

Figure 31 - China's Exports to Brazil (in Billion USD)



Source: National Bureau of Statistics, General Administration of Customs, 2005-2023

In conclusion, China's and Brazil's economic cooperation continues to deepen across multiple facets. The synergistic efforts in trade, new energy, infrastructure, and financial markets not only accelerate their respective economic growth but also contribute to the stability and development of the global economy. As both countries advance their strategic partnerships, they are poised to unlock new dimensions of economic collaboration for mutual benefit.

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